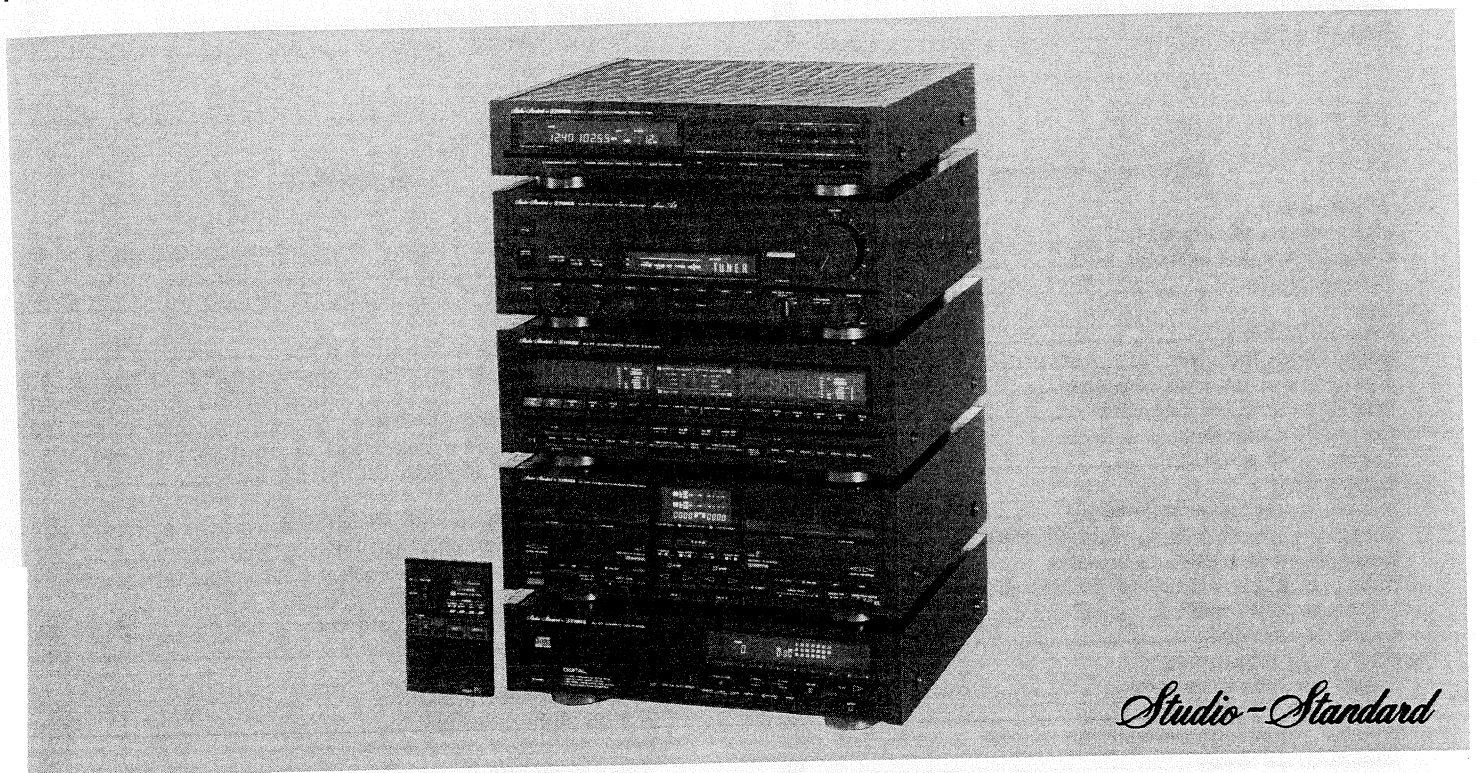


# FISHER

|             |                               |                                                                        |
|-------------|-------------------------------|------------------------------------------------------------------------|
| <b>(D)</b>  | <b>Bedienungsanleitung</b>    | Audio-Komponentensystem P7<br>mit Infrarot-Fernbedienung REM-P7        |
| <b>(F)</b>  | <b>Mode d'emploi</b>          | Chaine audio P7<br>avec télécommande sans fil REM-P7                   |
| <b>(GB)</b> | <b>Operating Instructions</b> | Audio Component System P7<br>with Wireless Remote Control REM-P7       |
| <b>(S)</b>  | <b>Bruksanvisning</b>         | Audiokomponentsystem P7<br>med trådlös fjärrkontroll REM-P7            |
| <b>(NL)</b> | <b>Gebruiksaanwijzing</b>     | Audio-komponentsysteem P7<br>met draadloze afstandsbediening REM-P7    |
| <b>(SF)</b> | <b>Käyttöohje</b>             | Audiokomponenttijärjestelmä P7<br>jossa on johdoton kaukosäädin REM-P7 |



FM-P7  
CA-P7  
CR-WP7

EQ-P7  
AD-P7

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**LASER-PRODUKT KLASSE 1**

**PRODUIT À LASER DE CATÉGORIE 1**

**CLASS 1 LASER PRODUCT**

**OBS! LASER AV KLASSE 1 ANVÄNDS I DENNA PRODUKT**

**KLASSE 1 LASERPRODUKT**

**“LASER-TUOTE – LUOKKA 1”  
SAA AVATA VAIN AMMATTIMIES  
LEVYKOTELOON EI SAA LAITTA VIERAITA ESINEITÄ**

**SICHERHEITSBESTIMMUNGEN / CERTIFICAT DE SÉCURITÉ / SAFETY CERTIFICATION  
SÄKERHETSFÖRESKRIFTER / VEILIGHEIDSCERTIFIKAAT / TURVALLISUUDEN VARMENNUS**

**Laser Diode Properties**

Material: Ga-Al-As  
Wavelength: 755 ~ 815 nm (25°C)  
Laser Output: Continuous Wave max. 0.5 mW

CLASS 1 LASER PRODUCT

CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.  
VORSICHT! UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT DEM STRAHL AUSSETZEN!  
VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.  
ADVARSEL - USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

**AD-P7**



**Abb. 2 /Fig. 2 /Afb. 2 /Kuva 2**

**ACHTUNG** - WENN ANDERE ALS DIE HIER BESCHRIEBENEN BEDIENUNGS- ODER JUSTIEREINRICHTUNGEN BENÜTZT ODER ANDERE ARBEITEN AUSGEFÜHRT WERDEN, KANN DIES ZU GEFÄHRLICHER STRAHLUNGSEINWIRKUNG FÜHREN.

**ATTENTION** - L'EMPLOI D'ORGANES DE COMMANDE OU DE RÉGLAGE, OU L'EXÉCUTION DE PROCÉDURES, AUTRES QUE CEUX SPÉCIFIÉS DANS LE MODE D'EMPLOI, PEUT PROVOQUER UNE EXPOSITION DANGEREUSE AU RAYONNEMENT.

**CAUTION** - USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

**VARNING** - BRUK AV KONTROLLER, JUSTERINGAR ELLER MANÖVRERING AV APPARATEN PÅ ANNAT SÄTT ÄN VAD SOM HÄR ANGIVS KAN INNEBÄRA STRÅLNINGSRISK.

**OPGELET** - HET GEBRUIK VAN REGELAARS OF HET MAKEN VAN AFSTELLINGEN E.D. DIE NIET IN DEZE GEBRUIKSAANWIJZING ZIJN BESCHREVEN KAN LEIDEN TOT SCHADELIJKE STRALINGEN.

**CAUTELA** - L'USO DI COMANDI, AGGIUSTAMENTI O PROCEDIMENTI DIVERSO DA QUELLO QUI SPECIFICATO PUÒ DAR LUOGO AD ESPOSIZIONE A RADIAZIONI PERICOLOSE.

**VAROITUS** - MUIDEN TOIMINTOJEN KUIN NÄIDEN, JOTKA OVAT TÄSSÄ ERITELTYNÄ, JA ERILAINEN SÄÄTMIEN TAI JA SÄÄDÄNTÖJEN KÄYTTÖ SAATTAA JOHTAA VAARALLISEN SÄTEILYN SYNTYMISEEN.

Congratulations! You have selected a fine audio system, and you can look forward to many pleasant hours of listening with this Fisher P7 audio component system.

- Read these operating instructions carefully before using the system.
- After reading, store these instructions in a safe place for future reference.

## Before Using

Using a screwdriver, turn the fixing screw on the bottom panel of the CD player approximately 1/4 turn clockwise (Fig. 1). Before transporting the CD player, always turn the fixing screw 1/4 turn counterclockwise to secure the pickup mechanism.

**Fig. 1**

- Bottom panel of CD player
- Approx. 1/4 turn
- Fixing screw

## General Information

This manual is designed to provide all the necessary information and instructions for successful operation of your FISHER audio system. If you are installing the system yourself, please pay careful attention to the separate Connections Manual when making connections.

This system has been adjusted for use with an AC 220V, 50Hz power supply.

Your FISHER audio system is designed to be insensitive to temperature and voltage changes under normal conditions. For longer service life and operating safety, it should not be placed near sources of extreme heat (close to heating units, radiators, or in direct sunlight), or areas of high humidity or moisture. Voltage fluctuations greater than  $\pm 10\%$  can lead to mechanical failure of the unit. If you have questions on these points, please ask your FISHER dealer for further information.

### Copyright Warning:

Recording copyright material without permission of the copyright owners is usually an infringement. If you wish to re-record copyright material, permission from the copyright owner is necessary. FISHER does not approve of, and cannot be held responsible for, any unlawful use of this machine.

## Main Features

### Multi-function CD Player (compatible with 8cm and 12cm CDs)

- Programmed playback for up to 20 tracks
- Direct search and index search
- Skip playback
- Forward and reverse search
- Repeat playback of a single track or entire disc
- Editing function for automatically selecting tracks for recording onto tapes of a specific length
- Auto space function for creating 5-second blank spaces between tracks
- Concentrated display for checking times, operating modes, etc., at a glance
- Linear motor drive mechanism for high speed access

### Digital Timer

- Unattended recording timer
- Wake-up timer
- Sleep timer

### Remote Control

- For easy operation from a distance

### CD Direct Function

- Compact disc signals are sent directly to the power amplifier

## Twin Seven-Band Equalizers

- One or two sources can be recorded simultaneously with different equalizer patterns onto the CR-WP7 cassette deck. You can also record with one equalizer pattern while playing with a different equalizer pattern.
- Five equalizer patterns have been preset in the memory (POPS, VOCAL, FUSION, DISCO and ROCK).
- Five other patterns can be created and stored in the memory for use with different types of music.
- The patterns can be reversed and the sound can be made flat at the touch of a button.

**Fig. 3**

- CD
- Graphic Equalizer 1
- Graphic Equalizer 2
- Deck 1
- Deck 2
- A CD can be recorded onto two tapes simultaneously with different graphic equalizer settings.

**Fig. 4**

- Record
- CD
- Graphic Equalizer 1
- Graphic Equalizer 2
- Deck 1
- Deck 2
- A record and a CD can be recorded onto two tapes simultaneously with different graphic equalizer settings.

**Fig. 5**

- Record
- CD
- Graphic Equalizer 1
- Graphic Equalizer 2
- To amplifier
- Deck 1
- Deck 2
- A record can be played with one graphic equalizer setting while recording a CD, etc., with another graphic equalizer setting.

## Independent Recording/Playback Decks With Auto Reverse and FCRS

- Auto reverse playback and recording eliminates the need to turn over the cassette.
- FCRS (Full Auto Computer Recording System) for quick and easy CD recording, auto edited recording, dubbing (normal and high speeds), tuner recording, and auto space recording.
- Simultaneous recording of two sources and cross Dolby recording
- Playback and recording with graphic equalizer effect

## Cross Dolby Recording

With this function, tapes can be dubbed (at normal speed) in any Dolby mode (B, C or off), regardless of the mode in which the original tape was recorded. (The DOLBY NR switch does not function during high speed dubbing.)

**Fig. 6**

- Deck 1
- Dolby C
- Dolby B
- Dolby off
- Dolby C
- Dolby B
- Dolby off
- Deck 2

\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol (D) are trademarks of Dolby Laboratories Licensing Corporation.

## Accessories

- Remote control unit (1)
- Remote control cords (4)
- Audio cords (9)
- Indoor FM antenna (1)
- Antenna holder (1)

## Names of Parts

### Tuner (FM-P7) (Fig. 7)

- ① Tuner and Timer display
- ② STATION buttons
- ③ TUNING/TIME buttons
- ④ AUTO/MANUAL button
- ⑤ MONO/STEREO button
- ⑥ BAND SELECT buttons
- ⑦ MEMORY/TIME button
- ⑧ CLOCK button
- ⑨ SLEEP button
- ⑩ TIMER REC button
- ⑪ TIMER PLAY button
- ⑫ DIMMER button
- ⑬ DISPLAY button
- ⑭ STATION NAME button
- ⑮ Remote control indicator

### Amplifier (CA-P7) (Fig. 8)

- ① POWER switch (ON/⏻)

#### CAUTION:

The POWER switch is connected to the secondary circuit and when switched off does not disconnect the unit from the AC power source even if the switch is in the ⏻ (OFF) position (as long as the AC power cord is connected to the AC line).

- ② SURROUND switch
- ③ REC OUT TAPE 1 button
- ④ REC OUT TAPE 2 button
- ⑤ Recording output/AV input display
- ⑥ CD DIRECT button and indicator
- ⑦ VOLUME control and Indicator
- ⑧ BALANCE control
- ⑨ LOUDNESS switch
- ⑩ REC OUT VCR1 switch
- ⑪ A/V SOURCE buttons
- ⑫ TREBLE control
- ⑬ BASS control
- ⑭ PHONES jack
- ⑮ Remote control sensor
- ⑯ Remote control/standby indicator

### Graphic Equalizer (EQ-P7)

#### Controls used for both equalizers 1 and 2 (Fig. 9)

- ① MEMORY button
- ② REMOTE CONTROL SELECT button
- ③ PEAK HOLD button
- ④ POWER switch (ON/⏻)
- ⑤ Remote control indicators

#### Graphic Equalizer 1

(Graphic Equalizer 2 includes the same controls)  
(Fig. 10)

- ① Spectrum analyzer/graphic equalizer display
- ② MODE button
- ③ FLAT button

- ④ REVERSE button
- ⑤ Equalizer select indicators
- ⑥ L/R indicators
- ⑦ DISPLAY button
- ⑧ EQ 1 SELECT button
- ⑨ ANALYZER LEVEL control
- ⑩ ANALYZER button
- ⑪ Graphic equalizer control buttons
- ⑫ Preset buttons  
(POPS, VOCAL, FUSION, DISCO and ROCK)

### Cassette Deck (CR-WP7)

#### Controls used for both decks 1 and 2 (Fig. 11)

- ① DUBBING button and indicator
- ② HIGH SPEED dubbing button and indicator
- ③ FCRS indicator
- ④ CD REC button and indicator
- ⑤ TUNER REC button and indicator
- ⑥ DIRECTION MODE switch
- ⑦ Remote control indicator

#### Deck 1 (Deck 2 includes the same controls) (Fig. 12)

- ① REVERSE, RECORD and FORWARD indicators
- ② COUNTER RESET button
- ③ MEMORY STOP button
- ④ Recording/playback level and counter display
- ⑤ STOP button and FORWARD/REVERSE PLAY buttons
- ⑥ INPUT LEVEL control
- ⑦ DOLBY NR switch
- ⑧ FAST FORWARD and REWIND, PAUSE and RECORD buttons
- ⑨ EJECT button

### CD Player (AD-P7) (Fig. 13)

- ① Remote control indicator
- ② Disc tray
- ③ CD display
- ④ Direct search buttons
- ⑤ OPEN/CLOSE button
- ⑥ FFWD and FBACK buttons
- ⑦ PAUSE button
- ⑧ PLAY button
- ⑨ STOP button
- ⑩ REPEAT button
- ⑪ SCAN/INDEX buttons
- ⑫ DISPLAY button
- ⑬ CLEAR button
- ⑭ CHECK button
- ⑮ MEMORY button
- ⑯ AUTO SPACE button
- ⑰ SIDE AB button
- ⑱ EDIT button
- ⑲ POWER switch

## Remote Control Unit (REM-P7) (Fig. 15)

Open the cover as shown in Fig. 14 to use the buttons below the (A) mark in Fig. 15a.

### 1 Amplifier Buttons

- **POWER switch (ON/⏻)**
- **VOLUME buttons**

Use these buttons to adjust the volume. The VOLUME control on the amplifier turns and the indicator flashes when the buttons are pressed.

- **MUTE button**

Press this button to lower the volume to a low level, such as when answering a phone call. The indicator on the amplifier's VOLUME control will flash. Press again to return to the original volume. The indicator will stop flashing.

- **FUNCTION buttons**

Use these buttons to select the desired audio or video source.

### 2 Tuner Buttons

- **AM and FM-1/2 buttons**
- **TUNER STATION buttons**

Use these buttons to tune in preset stations.

- **SLEEP button**

### 3 Recording and Dubbing Buttons

- **DUBBING button**
- **HIGH SPEED dubbing button**
- **CD REC button**
- **TUNER REC button**

### 4 Cassette Deck Buttons

- **FORWARD PLAY (▶) and REVERSE PLAY (◀) buttons**
- **STOP (□) button**
- **FAST FORWARD (⏭) and REWIND (⏮) buttons**
- **RECORD (●) button**
- **PAUSE (⏸) button**

### 5 Graphic Equalizer Buttons

- **CONTROL button**
- **PRESET button**
- **SOUND button**
- **Graphic equalizer control buttons**

### 6 CD Player Buttons

- **OPEN/CLOSE (⏏) button**
- **PLAY (▶) button**
- **STOP (□) button**
- **FFWD (⏭) and FBCK (⏮) buttons**
- **PAUSE (⏸) button**
- **CD 10key button**

Press this button then one of buttons 0 through 9 for direct search.

- **CLEAR button**
- **MEMORY button**
- **CD 10key buttons (0 to 9)**

## Playback

### Before Playing

1. Press the POWER switch on the amplifier.
  2. Turn the VOLUME control down to avoid sudden bursts of sound.
- When the amplifier is turned on, the remote control indicator turns off, but flashes each time a button on the remote control unit is pressed. The remote control indicators on other components also flash when a button operating that component is pressed on the remote control unit.
  - Make sure the POWER switches of the CD player, equalizer, and cassette deck (rear panel) are turned on.

## Remote Control Unit VOLUME buttons

Press the VOLUME UP (▲) button to increase the volume, and the VOLUME DOWN (▼) button to decrease the volume.

- When one of the VOLUME buttons on the remote control unit is pressed, the VOLUME control on the amplifier turns and the indicator flashes.
- The indicator on the amplifier's VOLUME control also flashes when the MUTE button on the remote control unit is pressed and during unattended recording (mute mode) using the timer.
- The mute mode is canceled when the VOLUME UP button is pressed.

### Notes on Adjusting the Volume

Unlike conventional records and cassette tapes, there is hardly any noise at all on compact discs. Thus, do not use the noise you may hear as a reference level for setting the volume when you start disc playback. Otherwise the result will be a very high volume level, that may damage your ears if you are listening through headphones. Remember that it is wise to always keep the volume level as low as possible until the music starts playing.

### When the amplifier's power is turned on . . .

#### < Tuner >

- The clock display flashes the first time the power is turned on after connections have been made or changed. For instructions on setting the clock, refer to "Setting the Clock".
- The tuner power turns on and FM 87.50MHz is shown on the display. If stations have been preset, the frequency set before the power was turned off appears on the display.

#### < Amplifier >

- The indicator on the VOLUME control lights.
- The source is set to the same source as when the power was turned off. (However, the source is set to CD if the power was turned off due to a power failure.)
- The REC OUT display indicates "SOURCE".

#### < Graphic Equalizer >

- The spectrum analyzer/graphic equalizer displays light.
- One of the equalizer select indicators lights for each of the equalizers.

#### < Cassette Deck >

- The FCRS indicator lights.
- The recording/playback level and counter display illuminates and the "0" at the right on the counter display first flashes then stops flashing and remains lit.

#### < CD Player >

- The information shown in Fig. 16 appears on the CD display:
- If a disc is loaded, the track numbers for the number of tracks on that disc light and the total playing time is displayed.

### DIMMER Button

Use this button to lower the brightness of the tuner, amplifier, cassette deck, CD player and graphic equalizer displays. Press again to return to normal brightness.

- The displays are set to normal brightness when the power is turned on.

### Selecting the A/V Source

- The A/V source switches automatically when you start playback on the CD player and cassette deck, and when you tune in a station on the tuner. (The tape or CD does not stop automatically when you switch to another source, so press the STOP button.)
- To use a turntable, DAT, or VCR, press the corresponding A/V SOURCE button or use the FUNCTION buttons on the remote control unit to select the desired source.

### Fig. 17

- a) **Example:** Press PHONO to play a record.

### CD DIRECT Indicator

If the CD DIRECT indicator is lit when playing a CD or CDV (Compact Disc Video), the signals bypass the pre-amplifier circuitry and are sent directly to the power amplifier to provide a high S/N ratio and low distortion. (This does not function during recording.)

The CD DIRECT indicator lights when the A/V source is set to CD and the CD DIRECT button is pressed.

- Turn the CD DIRECT button off if you want to adjust the CD sound with the equalizer or the BASS and TREBLE controls.
- The indicator can only be switched on and off while playing a CD or when the A/V source is set to CD.

## **SURROUND Switch**

Turning the SURROUND switch on gives more expansion to the sound. It connects surround speakers to create the atmosphere of a concert hall or stadium.

### **Example of System Installation (Fig. 18)**

#### **Fig. 18**

Left front speaker  
VCR, Video Disc player, etc.  
TV  
Audio component system  
Right front speaker  
Left surround speaker  
Right surround speaker

When surround speakers are connected, sound is produced from the surround speakers even when the SURROUND switch is turned off.

The surround effect cannot be obtained if the source is monaural. The surround effect cannot be obtained when the CD DIRECT button is turned on.

## **LOUDNESS Switch**

When the volume is low, sounds with low and high frequencies are less audible to the human ear than sounds with medium frequencies. Turn this switch on when listening with a low volume to emphasize the bass and treble.

### **Notes on the DUBBING, HIGH SPEED, CD REC and TUNER REC Buttons**

- Note that the dubbing mode is set when either the DUBBING or HIGH SPEED button is pressed while tapes are loaded in both Deck 1 and Deck 2.
- Note that if a tape is loaded in Deck 2 and a CD (or the radio) is playing, the CD (or tuner) recording mode is set if the CD REC (or TUNER REC) button is pressed.
- To protect important tape recordings, we recommend breaking off the accidental erasure prevention tabs. See "Protecting Important Recordings".

## **BASS and TREBLE Controls**

- Use the BASS control to adjust the low frequencies, the TREBLE control to adjust the high frequencies. Turn the control clockwise to increase the level, counterclockwise to decrease it. (The level is normal when the control is at the center position.)
- When using the graphic equalizer, set the BASS and TREBLE controls to the center position.

## **BALANCE Control**

Usually leave this control at the center position.

When turned clockwise, the sound from the right speaker is emphasized, and when turned counterclockwise, the sound from the left speaker is emphasized.

## **Listening Through Headphones**

First turn down the volume, then connect the headphones to the PHONES jack. The sound from the speakers is automatically cut.

- Keep the volume at an appropriate level to avoid damaging your ears.
- Listening through headphones for a long period of time may also damage your ears.

## **When Recording . . .**

The following switches, buttons and controls will not affect the recording, so you can adjust them to your liking while listening to the sound and recording.

- SURROUND and LOUDNESS switches
- CD DIRECT button
- VOLUME, BASS and TREBLE controls
- BALANCE control

## **Graphic Equalizer**

### **Basic Operation**

1. Turn on the amplifier's POWER switch.
2. Set the BASS and TREBLE controls on the amplifier to the center positions.  
The playback sound changes if the BASS and TREBLE controls are moved after adjusting the equalizer settings. (The recorded sound is not affected.)
3. Turn on the equalizer's POWER switch.
  - The spectrum analyzer/graphic equalizer displays turn on.
  - One of the equalizer select indicators lights for each of the equalizers.
4. Use the EQ 1 SELECT and EQ 2 SELECT buttons to select the mode. See the following section "Using the EQ 1 and EQ 2 SELECT buttons".
5. Start playing a source (CD, tape, etc.).
6. Adjust the levels of the different frequency bands. See "Adjusting the Equalizer Pattern".
7. For recording, set the cassette deck to the recording mode.
  - Recording with the equalizer effect is not possible when using the DUBBING and HIGH SPEED buttons on the cassette deck.

### **Using the EQ 1 and EQ 2 SELECT Buttons**

Use the EQ 1 SELECT button to select the operating mode for Graphic Equalizer 1.

Use the EQ 2 SELECT button to select the operating mode for Graphic Equalizer 2.

The operating mode switches between PASS (playback/recording without the graphic equalizer effect), LINE (playback with the graphic equalizer effect), EQ REC (recording with the graphic equalizer effect) each time the button is pressed.

- It is not possible to set both graphic equalizers 1 and 2 to "LINE" at the same time. The one last set to "LINE" is given priority. (When one is set to "LINE", the other one is automatically set to "PASS" if it was at "LINE".)

#### **Fig. 19**

- a) For playback with the graphic equalizer effect on 1 or 2:  
b) Graphic Equalizer 1  
c) Graphic Equalizer 2  
d) Playback with 1  
e) Playback with 2

#### **Fig. 20**

- a) For recording with the graphic equalizer effect on 1 or 2:  
b) Graphic Equalizer 1  
c) Graphic Equalizer 2  
d) Deck 1  
e) Deck 2  
f) Recording with 1  
g) Recording with 2

#### **Fig. 21**

- a) To play one or two sources with one graphic equalizer effect while recording with another:  
b) Graphic Equalizer 1  
c) Graphic Equalizer 2  
d) To amplifier  
e) Deck 1  
f) Deck 2  
g) Playback with 1, recording with 2  
h) Recording with 1, playback with 2

#### **Fig. 22**

- a) To record one or two sources with different graphic equalizer effects:  
b) Graphic Equalizer 1  
c) Graphic Equalizer 2  
d) Deck 1  
e) Deck 2  
f) Recording with 1 and 2

### Spectrum Analyzer Display

(for details, see the "Display" section)

- When Graphic Equalizer 1 or 2 is set to "PASS", the displays for both equalizers show the spectrum analyzer display for the frequency curve adjusted with the graphic equalizer set to "LINE" (or "EQ REC").
- When both Graphic Equalizer 1 and 2 are set to "PASS", the displays for both equalizers show the spectrum analyzer display for the regular (non-adjusted) frequency curve.

### Adjusting the Equalizer Pattern

**SOUND:** Simply press one of the POPS, VOCAL, FUSION, DISCO or ROCK buttons to play back or record with one of the factory-set equalizer patterns.

**PRESET:** Press one of buttons A through E to play back or record with one of the equalizer patterns you have preset.

**Manual:** Use the graphic equalizer control buttons to adjust the equalizer pattern manually.

### MODE Button

The mode switches between Manual, PRESET and SOUND each time this button is pressed.

- The mode is automatically set to Manual if one of the graphic equalizer control buttons is pressed.
- The mode is automatically set to PRESET if one of buttons A through E is pressed while in the Manual mode.

### SOUND mode:

Press the MODE button so that the SOUND indicator appears on the display. Then press one of the POPS, VOCAL, FUSION, DISCO or ROCK buttons.

### PRESET mode:

Press the MODE button so that the PRESET indicator appears on the display. Then press one of buttons A to E. (Equalizer patterns must first be preset on these buttons. See the following section "Presetting Patterns on Button A through E".)

### Manual mode:

Press one of the graphic equalizer control buttons. Then adjust the equalizer pattern.

- The graphic equalizer display switches back to the spectrum analyzer display after approximately 5 seconds, unless nothing is being played.
- Use the DISPLAY button to switch between the graphic equalizer and spectrum analyzer displays.

### Presetting Patterns on Buttons A Through E

The following description is for Graphic Equalizer 1. Operation is identical on Graphic Equalizer 2.

1. Use the graphic equalizer control buttons to set the desired pattern.
  2. Press the MEMORY button.
    - The "MEMORY" indicator appears for about 5 seconds.
  3. Press button A while the "MEMORY" indicator is displayed.
    - The "MEMORY" indicator turns off and the "PRESET" indicator appears.
    - Press the MEMORY button again if the "MEMORY" indicator turns off before you press button A.
  4. Repeat steps 1 to 3 to set patterns on buttons B through E.
- Patterns can be stored in the memory during both the play and stop modes.
  - Previous patterns are cleared when new patterns are stored at the same button.

### Graphic Equalizer Control Buttons

**64Hz:** Affects low bass sounds (bass guitar, drums, etc.). Press the UP button for a more stable, heavier sound.

**160Hz:** Press the UP button to eliminate muffled sound due to noise in the listening room.

**400Hz:** Frequencies around 400Hz are the basic frequencies in music and for the human voice. Press the UP button to emphasize vocals and give the sound more punch.

**1kHz:** This band affects medium frequencies above 400Hz. Press the UP button to enhance the sound of pianos, instruments, and higher vocals, making them seem closer to the listener.

**2.5kHz:** Press the UP button for a livelier sound. Press the DOWN button to make the sound softer.

**6.3kHz:** The human ear is very sensitive to this range. Press the UP button to enhance strings, etc., or the DOWN button for a less tinny sound.

**16kHz:** This band affects the overall mood, and also emphasizes such instruments as cymbals and triangles clearer. Press the DOWN button to reduce hiss noise on tapes.

### REVERSE Button

Press the REVERSE button to reverse the pattern. Press again to return to the previous pattern. (The "SOUND" and "PRESET" indicators do not reappear.)

- If the REVERSE button is pressed while the spectrum analyzer is displayed, the display switches momentarily to the graphic equalizer display, then returns to the spectrum analyzer display.

### FLAT Button

Press the FLAT button to make the frequency curve flat. To return to the previous setting, operate as explained under "MODE Button".

- If the FLAT button is pressed while the spectrum analyzer is displayed, the display switches momentarily to the graphic equalizer display, then returns to the spectrum analyzer display.

### Display

Separate spectrum analyzers for the left and right channels can be displayed by pressing one of the ANALYZER buttons to turn on the L/R indicator.

- The ANALYZER 1 L/R indicator and ANALYZER 2 L/R indicator cannot be turned on at the same time.
- The pattern cannot be adjusted separately for the left and right channels.

### Fig. 23

- a) Lit
- b) The frequency curve for Graphic Equalizer 1 is displayed with independent spectrum analyzers for the left and right channels.
- c) The frequency curve for Graphic Equalizer 2 is displayed with independent spectrum analyzers for the left and right channels.
- d) Graphic Equalizer 1
- e) Graphic Equalizer 2
- f) Left channel display
- g) Right channel display

If one of the ANALYZER buttons is pressed again, the display returns to the spectrum analyzer display for the left and right channels mixed.

### Fig. 24

- a) Off
- b) The spectrum analyzer for either Graphic Equalizer 1 or 2 or both is displayed with the left and right channels mixed.
- c) Graphic Equalizer 1
- d) Graphic Equalizer 2
- e) Mixed display

- When Graphic Equalizer 1 or 2 is set to "PASS", the displays show the independent left and right channel spectrum analyzers for the frequency curve adjusted with the graphic equalizer set to "LINE" (or "EQ REC").
- When both Graphic Equalizer 1 and 2 are set to "PASS", the displays show the independent left and right channel spectrum analyzers for the regular (non-adjusted) frequency curve.

### DISPLAY Button

Press the DISPLAY button to switch between the spectrum analyzer and graphic equalizer display.

### PEAK HOLD Button

Press the PEAK HOLD button to hold the peak level when the spectrum analyzer display is selected.  
Press again to turn the peak hold function off.

### SPECTRUM ANALYZER LEVEL Control

Use this control to adjust the spectrum analyzer level.  
The spectrum analyzer is not displayed when the control is set all the way to the left side (MIN).

### Remote Control Operation

Press either the REMOTE CONTROL SELECT button on the equalizer or the CONTROL button on the remote control unit to select whether to operate Graphic Equalizer 1 alone, Graphic Equalizer 2 alone, or Graphic Equalizers 1 and 2 simultaneously.

The mode switches from both "REMOTE" indicators lit (operation of both Graphic Equalizer 1 and 2) to Graphic Equalizer 1 "REMOTE" indicator lit (operation of Graphic Equalizer 1 alone), then Graphic Equalizer 2 "REMOTE" indicator lit (operation of Graphic Equalizer 2 alone) each time the REMOTE CONTROL SELECT or CONTROL button is pressed. The mode is indicated by the "REMOTE" indicators on the display.

### Remote Control Unit PRESET and SOUND Buttons

- The mode switches from A to B, etc., each time the PRESET button is pressed.
- The mode switches from POPS to VOCAL, etc., each time the SOUND button is pressed.

### About Compact Discs

Filthy, scratched, or warped discs can result in skipping or noise. Be careful of the following when handling discs.

### Removing the disc from the case

Press down on the tabs in the center of the disc, hold the outer edges of the disc, and pull up (Fig. 25).

### Holding the disc

When holding a disc, avoid touching the signal surface (the side that shines in bright colors) (Fig. 26).

### Fig. 26

) Or

### Storing discs

- Always store discs in their case.
  - Place the disc in the case with the labelled surface facing up. If you press on the tabs in the center, they will lock the disc in the case.
- Do not store CDs in the following places:
  - Hot places, such as near heating equipment, etc.
  - In closed cars in the summer. The interior will inevitably become very hot and damage your discs.
  - Humid or dusty places.
- Do not write on the label with ballpoint pens, hard pencils, etc., or attach sheets of paper to it.

### Cleaning discs

Use a soft cloth to wipe any fingerprints or dust off the signal surface.

- Wipe from the inside toward the outside.
- Never use record cleaner, anti-static materials, benzene, thinner, or other solvents on compact discs.

Only discs bearing the mark shown in Fig. 27 can be played on this CD player.

### Listening to Compact Discs

- Press the POWER switch on the CD player to turn its power on.
  - To listen in the CD direct mode, press the CD DIRECT button to turn the CD DIRECT indicator on.
1. Press the OPEN/CLOSE button to open the disc tray.
    - The disc tray slides open.
  2. Set the disc in the tray.
    - The labelled side should be face up.
    - For 8cm discs, set the disc in the groove at the center of the tray.
  3. Press the PLAY button. The disc tray closes and playback begins from the first track.
    - The track numbers at the right indicate the actual tracks on the disc, up to track number 20. If there are more than 20 tracks on the disc, "OVER" appears at the right of track number 20.
    - The bracket next to the track number flashes while that track is playing, then disappears after the track has played.
- When turning on the power after the power has been turned off with a disc set in the disc tray, wait until the track numbers and the total playing time appear before pressing the PLAY button.
  - Playback is not possible with non-standard discs or if the disc is set upside down. In some cases, playback may also not be possible if there are scratches, fingerprints, or dust on the disc.
  - Do not try to force the disc tray closed.
  - Do not set a 12cm disc on top of an 8cm disc, as this could scratch the discs and damage the set.

### After Playback

The display shown in Fig. 28 appears once all tracks have played.

1. Press the OPEN/CLOSE button to open the disc tray, then remove the disc.
2. Press the OPEN/CLOSE button again to close the disc tray.

### Stopping Playback Temporarily

1. Press the PAUSE button.
2. To resume playback, either press the PAUSE button again or press the PLAY button.

### To Stop Playback

Press the STOP button.

### Checking the Number of Tracks and Total Playing Time

Press the OPEN/CLOSE button after setting the disc in the disc tray. The disc tray closes and the display shown in Fig. 29 appears.

### Fig. 29

- a) Total number of tracks
- b) Total playing time
- c) Tracks on disc

### Forward and Reverse Search

Press the SCAN/INDEX buttons during playback and release the button when the desired place is reached (Fig. 30).

Use this function to skip a little ahead or to play a section over again.

### Fig. 30

- a) To search backward
- b) To search forward

- When one of the buttons is pressed, search will take place at medium speed for the first four seconds, then at high speed.
- The volume is lower than normal during the search operation. Listen to this sound and watch the elapsed time display to find the desired place. Playback resumes once the button is released.
- The search operation is also possible in the pause mode. The pause mode is still set when the button is released.
- During programmed playback, the search operation will work within the track in which it is used as follows:  
If you reach the end or beginning of the track during search operation, playback starts from the next programmed track or from the start of the current track once you release the button. (During programmed repeat of a single track, searching is only possible within that track.)

## Direct Search

**Example:** Starting playback from track 3

1. Press direct search button "3" to specify track 3.
    - Press the "CD 10key" button on the remote control unit, then button "3".
  2. Press the PLAY button to begin playback from track 3.
- If a number higher than the highest track number on the disc is specified while the disc tray is open, the final track on the disc is played.
  - Tracks can also be specified using the FFWD and FBACK buttons.

## Skip Playback

**Example:** Skipping to track 6 during playback of track 3

1. Press direct search button "6" to specify track 6.
  2. Press the PLAY button within 10 seconds to begin playback from track 6.
- Skip play is not possible if the PLAY button is not pressed within 10 seconds after specifying the desired track number.
  - Tracks can also be specified using the FFWD and FBACK buttons. In this case, playback begins automatically after the track is specified. (There is no need to press the PLAY button.)
  - The FFWD and FBACK buttons can also be used during programmed playback to skip ahead in the program. (Skipping is not possible with the direct search buttons during programmed playback.)

## Index Search

- Specify the index number while in the stop mode.
- Refer to the disc's explanatory notes for the index numbers.
- If a number greater than the highest index number is specified, playback begins from the first index number.

**Example:** Starting playback from index number 2 on track 3

1. Press direct search button "3" to specify track 3.
2. Press SCAN/INDEX button "►" to specify index number 2.
3. Press the PLAY button to begin playback from index number 2 on track 3.

## Repeat Playback

- Repeat playback of either all tracks on the disc (or all programmed tracks) or only one track is possible.
- Press the REPEAT button to select the repeat mode. The mode switches from all tracks ("REPEAT ALL" indicator lit) to one track ("REPEAT ONE" indicator lit), then off (Indicator off) each time the REPEAT button is pressed.
- To repeat the programmed tracks, press the REPEAT button after setting the program or during programmed playback.

## Repeating One Track Only

Press the REPEAT button during playback until the "REPEAT ONE" indicator appears on the display.

## Repeating All Tracks

Press the REPEAT button during the playback or stop mode until the "REPEAT ALL" indicator appears on the display.

## Switching the Time Display

Use the DISPLAY button to check the remaining time on the disc and the playing time.

- The remaining time per track is not displayed for discs including 32 tracks or more. During programmed playback, only the elapsed time is displayed.
- The times may not always exactly match the times indicated on the disc's explanatory notes.

## During Playback:

The display switches from remaining time per track (EACH REMAIN indicator lit) to total playing time (TOTAL indicator lit), total remaining time (TOTAL REMAIN indicator lit), then elapsed time per track (EACH indicator lit) each time the DISPLAY button is pressed.

- The display automatically returns to the elapsed time per track after approximately 10 seconds.

## During the Stop Mode:

The display switches from total playing time (TOTAL indicator lit) to total remaining time (TOTAL REMAIN indicator lit), then playing time per track (EACH indicator lit) each time the DISPLAY button is pressed.

- The display automatically returns to the elapsed time per track once playback begins.

- The playing times can be checked for each track by using the direct search buttons or the FFWD and FBACK buttons. (To specify a one-digit track number with the direct search buttons, press 0 first then the number of the track. For example, to specify track 3, press "0" then "3".)

## During the Auto Edit Recording Stop Mode:

The total playing time is displayed when the EDIT button is pressed. After this, the display switches from remaining time on tape (TOTAL REMAIN indicator lit) to playing time for indicated track (EACH indicator lit), then total playing time (TOTAL indicator lit) each time the DISPLAY button is pressed.

- The total playing times and remaining time on the tape can be checked individually for sides A and B by pressing the SIDE AB button to switch to the "SIDE A" or "SIDE B" mode.
- The times can also be checked when the AUTO SPACE button is pressed turning the SPACE indicator off.
- For details on the auto edit recording function, see "Automatic Edited Recording".

## Programmed Playback

With this function, you can play the tracks on the disc in any order you like. (Up to 20 tracks can be set in the program.)

- The same track can be programmed to play more than once. (Index numbers cannot be programmed.)
- Programming is only possible from the stop mode.

**Example:** In this example, we program the tracks on a disc containing 20 tracks to play once each.

| Order of playback (= step) | 1st | 2nd | 3rd | 4th | 5th | 6th | ..... | 20th |
|----------------------------|-----|-----|-----|-----|-----|-----|-------|------|
| Track numbers              | 5   | 2   | 16  | 10  | 13  | 20  | ..... | 8    |

## Programming Procedure

1. Press direct search button "5" to specify track 5.
  - Press the "CD 10key" button on the remote control unit, then button "5".
2. Press the MEMORY button.
  - Track 5 is now programmed to play first.
3. Repeat steps 1 and 2 above to program other tracks. Up to 20 tracks can be programmed.

- Tracks can also be specified using the FFWD and FBACK buttons.
- If you attempt to program a 21st track, "FULL" will appear on the elapsed time display when the MEMORY button is pressed and that track will not be programmed.

## Checking and Playing the Program

- 1. Press the CHECK button to display the content of the program.
  - The track numbers and step numbers appear in the programmed order each time the CHECK button is pressed.
  - The total playing time for the programmed tracks and the display of the programmed tracks do not change.
- 2. Press the PLAY button to begin programmed playback.
  - The time display switches from the total playback time for the programmed tracks to the elapsed time per track.

After the last programmed track is played, the display shown in Fig. 31 appears.

- 3. To correct the program, press the CLEAR button and start over.
- 4. The content of the program cannot be checked during programmed playback, even if the CHECK button is pressed.
- 5. The program is cleared in the following cases:
  - When the CLEAR button is pressed.
  - When the EDIT button is pressed.
  - When the OPEN/CLOSE button is pressed.
  - When the power is turned off.

Use the display of the total playing time for the programmed tracks to select a tape of the proper length or choose tracks which will fit on the tape when conducting programmed recording.

## Listening to Tapes

- 1. Both Deck 1 and Deck 2 are auto reverse recording and playback decks.
  - 2. In this manual we describe operation on Deck 1. Deck 2 operates in the same way.
1. Press the EJECT button and open the cassette lid.
  2. Load the cassette tape.
    - Load the cassette tape with the side on which the tape is visible facing down.
    - After loading the tape, press the cassette lid to close it.
  3. Set the DOLBY NR switch.
    - B: For tapes recorded with Dolby B.
    - OFF: For tapes recorded without Dolby.
    - C: For tapes recorded with Dolby C.
  4. Press the FORWARD PLAY or REVERSE PLAY button to start playback.
    - When the FORWARD PLAY button is pressed, playback starts of the front (outer) side and the FORWARD indicator lights.
    - When the REVERSE PLAY button is pressed, playback starts of the rear side and the REVERSE indicator lights.

## Cassette Tapes

- 1. Metal tapes without detection holes cannot be used on this deck, since the auto tape selector cannot detect them.
- 2. Endless tapes cannot be used on this deck.
- 3. C-120 cassette tapes are convenient for long-term playback, but as they use extremely thin tape which may get stuck in the mechanism through repeated playing, stopping, fast forwarding and rewinding, it is better to avoid using them.
- 4. Take up any slack in the tape before using it (Fig. 32). If a slack tape is used, it may get caught in the mechanism, damaging the mechanism and the tape.

## Quick Reverse

The quick reverse mechanism is activated when the deck is in the playback, recording or dubbing mode for over 12 seconds.

- 1. The quick reverse mechanism will not function if playback or recording is started near the end of the tape (less than 12 seconds from the end).
- 2. The quick reverse mechanism may not function with wrinkled or damaged tapes, or tapes which have been cut and taped together.

## Playback Level Display

This indicates the playback level separately for the left and right channels, regardless of the INPUT LEVEL control setting.

## Tape Counter

The tape counter display changes as shown below when playback starts.

When recording, make note of the number on the counter at the beginnings and ends of selections to make it easy to find them later.

**When playback starts in the forward direction: (Fig. 33)**

**When playback starts in the reverse direction: (Fig. 34)**

- 1. Press the COUNTER RESET button to reset the counter to "0000".
- 2. The counter is reset to "0000" when the amplifier's power is turned off.

## Auto Reverse

Three different reverse modes can be set using the DIRECTION MODE switch. Set the switch to the desired position before (or during) playback.

**One-side playback (↔):** Only one side of the tape is played.

**Two-side playback (↔):** Both sides of the tape are played once.

If playback starts from the reverse side, only the reverse side is played.

**Continuous playback (↔):** Both sides of the tape are played continuously.

## Auto Tape Selector

The tape type (normal, chrome or metal) is detected automatically when the tape is loaded, and the bias and equalization are set accordingly.

## Sequential Playback Between Decks 1 and 2 (Fig. 35)

1. Load tapes in both Deck 1 and Deck 2.
2. Set the DIRECTION MODE switch to the (SEQ PLAY) position.
3. Press one of the PLAY buttons (FORWARD or REVERSE) on Deck 1 or Deck 2.
  - Playback continues from Deck 1 to Deck 2 and vice-versa until the STOP button for the deck currently playing is pressed.

**Fig. 35**

- a) Deck 1 forward side
- b) Deck 1 reverse side
- c) Deck 2 forward side
- d) Deck 2 reverse side

## Memory Stop (Fig. 36)

1. Before starting playback, press the COUNTER RESET button to reset the counter to "0000".
2. Press the MEMORY STOP button before (or during) playback. The "MS" indicator lights.
3. Start playback, press the STOP button when the desired place is reached, then press the REWIND button to rewind the tape.
4. The tape is rewound to the place where the counter reaches "0000" and stops automatically (at "9999").
5. Press the FORWARD PLAY button to resume playback. (The counter starts counting from "0000".)

**Fig. 36**

- a) Set counter to "0000".
- b) "MS" indicator lights.

- 1. To cancel the memory stop function, press the MEMORY STOP button again to turn the "MS" indicator off.
- 2. The memory stop function will not work if the FAST FORWARD button is pressed.
- 3. For Deck 1, the ASF function has priority over the memory stop function.

## Stopping Playback Temporarily

1. Press the PAUSE button.  
(The FORWARD or REVERSE indicator starts flashing.)
2. Press the PAUSE button again to resume playback.  
(The FORWARD or REVERSE indicator stops flashing.)

## Stopping Playback

1. Press the STOP button.
2. To remove the tape, press the EJECT button.

## Fast Forwarding and Rewinding

1. If the deck is in the play mode, press the STOP button first.
2. Press the FAST FORWARD or REWIND button.
  - The tape is wound to the left if the REWIND button is pressed, to the right if the FAST FORWARD button is pressed.
  - The fast forward or rewind operation stops automatically when the end (or beginning) of the tape is reached.

## Automatic Search Function (ASF) for Deck 1

On Deck 1, if the FAST FORWARD or REWIND button is pressed during playback, the tape is automatically wound to the beginning of the following selection or the current selection, and playback resumes from there. (The FORWARD or REVERSE indicator flashes during the ASF operation.)

### REWIND button:

During playback in the forward direction: The tape is rewound to the beginning of the current selection.  
During playback in the reverse direction: The tape is wound to the beginning of the following selection.

### FAST FORWARD button:

During playback in the forward direction: The tape is wound to the beginning of the following selection.  
During playback in the reverse direction: The tape is rewound to the beginning of the current selection.

- The ASF function will only operate if there are blanks (unrecorded sections) of 4 seconds or more between selections.
- If used near a TV, the radio waves from the TV may prevent the ASF function from working properly. If so, either turn the power of the TV off or move the TV away.

## Listening to the Radio

### Automatic Tuning

1. Press the AUTO/MANUAL button so that the "AUTO" indicator lights.
2. Press the UP button to increase the frequency, the DOWN button to decrease the frequency. Release the button.
  - The frequency changes continuously until a station is tuned in, at which point the TUNED indicator lights.

### Manual Tuning

Use manual tuning to tune in frequencies with weak signals.

1. Press the AUTO/MANUAL button so that the "MANUAL" indicator lights.
  2. Press the UP or DOWN button to change the frequency.
    - The frequency changes while the button is held in. Release the button near the desired frequency, then press and release it repeatedly in small steps until the desired station is tuned in.
    - The frequency changes in steps of 9kHz for the AM band, 0.05MHz for the FM band.
- When the maximum (or minimum) frequency is reached, tuning automatically resumes from the minimum (or maximum) frequency.
  - To tune in FM stations with weak signals, press the MONO/STEREO button so that the ST/MUTE indicator turns off. In this mode, stereo broadcasts are received in monaural.

## Presetting Stations

One AM, one FM-1 and one FM-2 station can be preset at each of the 12 STATION buttons.

1. Press the AM or FM-1/2 button to select the band of the station you want to preset.
  - For the FM-1/2 button, the mode switches between FM-1 and FM-2 each time the button is pressed.
2. Press the UP or DOWN button to tune in the desired station.
3. Press the MEMORY/TIME button.
  - The "MEMORY" indicator lights and the "CH" indicator flashes.
  - The current time display turns off and the "STATION NAME" indicator lights.
4. Press the STATION button at which you want to preset the station while the "MEMORY" indicator is lit (approximately 5 seconds).
  - The "CH" indicator stops flashing and the number of the STATION button which was pressed appears.
  - If the "MEMORY" indicator turns off before you press one of the STATION buttons, press the MEMORY/TIME button again.
  - The current time reappears approximately 5 seconds after the STATION button is pressed. See the following section "Switching the Display".

5. Press the STATION NAME button.
  - The "STATION NAME" indicator and the cursor (or letter) flash.
6. Set the station name.
  - Up to four letters, numbers or symbols can be set.
  - Press the UP or DOWN button and the MEMORY/TIME button alternately to set the station name.

### Example: To set "ABC1"

- 1) Press the UP or DOWN button to find "A".
- 2) Press the MEMORY/TIME button.
- 3) Press the UP or DOWN button to find "B".
- 4) Press the MEMORY/TIME button.
- 5) Press the UP or DOWN button to find "C".
- 6) Press the MEMORY/TIME button.
- 7) Press the UP or DOWN button to find "1".
- 8) Press the MEMORY/TIME button.

When the UP button is pressed, the letters change in the order A → B → ... → cursor. When the DOWN button is pressed, the letters change in the opposite order (Fig. 37).

- The letter changes once each time one of the buttons is pressed.
- The letters change continuously if the button is held in, and stop when the button is released.

- The "STATION NAME" indicator and the cursor (or letter) flash while the station name is being set. The cursor (or letter) moves one place to the right each time a letter is set.
- Approximately 5 seconds after the station name is set, the station name disappears and the current time reappears. See the following section "Switching the Display".

7. Repeat steps 1 to 6 (or 2 to 6) above to preset other stations.

- When a station is preset at a button at which a station from the same band has already been preset, the previous station is cleared.
- The preset stations are all cleared if the power supply is disconnected due to a power failure, etc.

### Setting Less Than Four Letters

If for example you want to name the station "ABC" without setting the fourth place, press the STATION NAME button after setting the letter "C".

### Deleting Station Names

1. Press the STATION NAME button.
2. Press the UP or DOWN buttons to display the cursor (the last symbol).
3. Press the MEMORY/TIME button.
4. Repeat steps 2 and 3 above.

## Listening to AM and FM Broadcasts

1. Press the AM or FM-1/2 button to select the desired band.
  2. Press the STATION button at which the desired station has been preset.
    - The current time reappears after approximately 5 seconds.
- The "STEREO" indicator lights when receiving FM stereo broadcasts.
  - If a TV is set near the tuner, it may cause noise when receiving AM or FM broadcasts. If so, either turn the TV off or move it away from the tuner.

## Switching the Display

The display switches from the current time and frequency to the station name and frequency, then the station name and current time each time the DISPLAY button is pressed.

- When the station name and frequency (or station name and current time) are displayed, the display switches to the current time and frequency display when the UP or DOWN button is pressed.
- When the current time and frequency (or station name and current time) are displayed, the station name and frequency are displayed for approximately 5 seconds when any of the AM, FM-1/2, MEMORY/TIME, or STATION buttons is pressed.

## Recording

### Before Recording and Dubbing

1. Load the tape onto which you want to record.
  - Set the tape with the side onto which you want to record facing out.
  - Make sure that the accidental erasure prevention tabs have not been broken off. See "Protecting Important Recordings".
2. Set the DOLBY NR switch.
  - B: To record with Dolby B.
  - OFF: To record without Dolby.
  - C: To record with Dolby C.
3. Set the DIRECTION MODE switch.
  - : To record on one side only.
  -  or : To record consecutively on both sides.

If recording is started from the reverse side, only the reverse side will be recorded.

  - Sequential Recording: You can record in sequence from Deck 1 (or Deck 2) onto Deck 2 (or Deck 1) by setting the DIRECTION MODE switch to the  position.
4. Press the REC OUT button.
  - See the following section "REC OUT Button".
5. Press the PAUSE button.
  - The FORWARD and REVERSE indicators flash.
6. While pressing on the RECORD button, press the FORWARD PLAY or REVERSE PLAY button to set the deck to the record pause mode.
  - Press the FORWARD PLAY button to record on the forward side or on both sides.

The RECORD indicator flashes and the FORWARD indicator remains flashing.

  - Press the REVERSE PLAY button to record on the reverse side.

The RECORD indicator flashes and the REVERSE indicator remains flashing.
7. Start playback on the source you wish to record.
8. Adjust the recording level.
  - There is no need to adjust the recording level during FCRS dubbing.

### Adjusting the Recording Level

- For normal and chrome tapes:  
Adjust so that the recording level indicator lights up to the "0" mark when the volume is high. (The indicator may light up to the "+3" mark momentarily.)
  - For metal tapes:  
Adjust so that the recording level indicator lights up to the "+3" mark when the volume is high. (The indicator may light up to the "+6" mark momentarily.)
9. Stop playback on the source.
  10. Start FCRS recording or manual recording.

### REC OUT Button

(The mode is set to "SOURCE" when the power is turned on)

#### For Manual Recording on Deck 1:

Press the REC OUT TAPE 1 button to select the source to be recorded onto Deck 1 (Fig. 38).

- The "▲" mark indicates the recording source.

#### For Manual Recording on Deck 2:

Press the REC OUT TAPE 2 button to select the source to be recorded onto Deck 2 (Fig. 38).

- The "▼" mark indicates the recording source.

### Fig. 38

- a) To dub from Deck 2 to Deck 1.
  - b) To record a CD on Deck 1.
  - c) To record a radio program on Deck 1.
  - d) To record a record or DAT, etc. on Deck 1.
  - e) To dub from Deck 1 to Deck 2.
  - f) To record a CD on Deck 2.
  - g) To record a radio program on Deck 2.
  - h) To record a record or DAT, etc. on Deck 2.
- Aside from d) and h), recording is done regardless of the A/V source setting. The REC OUT button does not function during recording.

### FCRS Recording of Compact Discs

- Before starting, play the disc and adjust the recording level. See the previous section "Adjusting the Recording Level".

**Use Deck 2.** (Recording starts in the forward direction.)

### FCRS CD Recording

Recording onto the tape starts automatically simply by pressing the CD REC button (Fig. 39).

### Fig. 39

- a) Tape rewound automatically
  - b) Tape automatically set at beginning of leader tape
  - c) Recording starts
  - d) Pause
  - e) Beginning of playback
  - f) CD player operation
- When the CD player is set to the pause mode, Deck 2 is set to the recording standby mode.
  - When the CD player is set to the stop mode, Deck 2 is also set to the stop mode.
  - Press the Deck 2 STOP button to cancel the recording mode. (CD playback continues.)
  - Use the manual recording procedure to start recording from the middle of the tape. See "Manual Recording".

### Normal Recording

(Go to "Procedure for Normal Recording")

The tracks are recorded in the same order as on the disc. (Programmed recording is also possible.)

### Edited Recording

(Go to "Procedure for Automatic Edited Recording" and/or "Procedure for Manual Edited Recording")

With this function, the tracks are selected so that no track will be cut in half at the end of the tape.

### Automatic Edited Recording

In this case, simply press the EDIT button and select the tape length (46, 60 or 90 minutes). The tracks to be recorded are selected automatically.

- Automatic edited recording is also possible on 30-, 40-, 50- or 54-minute tapes, etc.

### Manual Edited Recording

Edited recording of programmed tracks is possible onto 46-, 60-, and 90-minute tapes.

- Manual edited recording of programmed tracks is also possible on 30-, 40-, 50- or 54-minute tapes.

### Auto Space Recording

This function automatically creates 5-second blank sections between selections on the tape.

### During Recording . . . (Fig. 40)

### Fig. 40

- a) The RECORD indicator and the FORWARD (when in the forward direction) or REVERSE (when in the reverse direction) indicator are lit.
- b) The CD REC indicator flashes then remains lit.

### Procedure for Normal Recording

For programmed recording, set the program beforehand. See "Programmed Playback".

1. For auto space recording, press the AUTO SPACE button to turn the "SPACE" indicator on.
  2. Press the CD REC button to start FCRS recording.
- For edited recording, the auto space function is set automatically when the EDIT button is pressed. See "Procedure for Automatic Edited Recording".
  - To turn the auto space function off, press the AUTO SPACE button to turn the "SPACE" indicator off.

### Protecting Important Recordings

If a new recording is made on a tape which has already been recorded, the old recording is automatically erased.

- By breaking the accidental erasure prevention tabs off the tape, you can protect important recordings from being erased accidentally.
- If you want to record on a tape whose tabs have been broken, place a piece of adhesive tape over the holes (Fig. 41).

**Fig. 41**

- a) Side A
- b) Tab for side A
- c) Tab for side B
- d) Adhesive tape

### Procedure for Automatic Edited Recording

1. Load the disc and wait for the total number of tracks and total playing time to appear on the display. See "Checking the Number of Tracks and Total Playing Time".
2. Press the EDIT button to select the tape length.
  - The length switches from 46 minutes to 60 minutes, 90 minutes, then off each time the EDIT button is pressed.
  - The auto space function is set automatically.
3. To record without the auto space function, press the AUTO SPACE button to turn the "SPACE" indicator off.
4. Press the CD REC button to begin FCRS recording.

### SIDE AB button

Press this button repeatedly to switch the display to indicate the tracks and recording times for sides A and B separately. (Once recording starts, the display switches automatically between the sides.) The display mode switches from "SIDE AB" to "SIDE A", then "SIDE B" each time the SIDE AB button is pressed.

**Example:** To record a disc containing 12 tracks onto a C-46 tape with auto edited recording and the auto space function (Fig. 42)

**Fig. 42**

- a) **Example of tracks on disc**
- b) Space between tracks - 1 second
- c) Playing time (minutes:seconds)
- d) The tracks are recorded as follows onto sides A and B of the C-46 tape.
- e) Space between tracks - Approx. 5 seconds
- f) Tracks recorded onto side A
- g) Tracks recorded onto side B
- h) **Tape and CD operation**
- i) Space between tracks - Approx. 5 seconds
- j) Quick reverse
- k) Side A
- l) Leader tape
- m) Track 1
- n) Track 2
- o) Track 3
- p) Track 4
- q) Track 5
- r) Non-recorded section
- s) CD playback
- t) Pause
- u) Tracks are recorded onto side B in the same way.

- Once track 5 is recorded onto side A of the tape, the deck is set to the non-recording mode until the leader tape is reached. At this point, the quick reverse mechanism switches the direction of playback and recording continues on side B.
- The display on the CD player is as shown in Fig. 43 while the auto space function is creating the blank space on the tape.

**Fig. 43**

- a) End of playback
- b) Beginning of playback

### Automatic Edited Recording With Other Tape Lengths

**Example:** To record on a 40-minute tape

1. Load the disc and wait for the total number of tracks and total playing time to appear on the display.
2. Press direct search buttons "4" then "0".
3. Press the EDIT button.

4. To record without the auto space function, press the AUTO SPACE button to turn the "SPACE" indicator off.
5. Press the CD REC button to begin FCRS recording.

### Procedure for Manual Edited Recording

1. Load the disc and wait for the total number of tracks and total playing time to appear on the display.
2. Press the EDIT button.
3. Press the CLEAR button.
  - The bracket(s) start flashing.
4. To record without the auto space function, press the AUTO SPACE button to turn the "SPACE" indicator off.
5. Program the desired tracks. See "Programming Procedure".
  - The brackets indicate which tracks are programmed.
  - If bracket is lit: Track programmed.
  - If bracket is flashing: Track can fit onto tape.
  - If bracket is off: Track cannot fit onto tape.
  - Once the tracks to be recorded on side A are set, the "SIDE A" indicator switches to "SIDE AB".
  - Tracks which do not fit on side A are recorded on side B.
  - Note that the program is cleared if the EDIT button is pressed after the program is set.
6. Press the CD REC button to begin FCRS recording.

### Manual Edited Recording With Other Tape Lengths

**Example:** To record onto a 40-minute tape

1. Load the disc and wait for the total number of tracks and total playing time to appear on the display.
2. Press direct search buttons "4" then "0".
3. Press the EDIT button.
4. Press the CLEAR button.
5. To record without the auto space function, press the AUTO SPACE button to turn the "SPACE" indicator off.
6. Program the desired tracks.
7. Press the CD REC button to begin FCRS recording.

### FCRS Recording of the Radio

- First tune in the station and adjust the recording level. See "Adjusting the Recording Level".
- If the TUNER REC button is pressed during recording, a blank space of approximately 5 seconds is created and the deck is set to the pause mode. Press the TUNER REC button again to resume recording. Use this function to cut out narrations, commercials, etc.

**Use Deck 2.** (Recording starts in the forward direction.) However, if the DIRECTION MODE switch is set to the  position, recording continues on Deck 1 after the tape in Deck 2 reaches the end.

1. Press the TUNER REC button to start recording when the program you want to record begins.

### To cut out narrations, commercials, etc.: (Fig. 44)

**Fig. 44**

- a) Press the TUNER REC button.
  - b) The Deck 2 "TUNER REC" indicator lights.
  - c) The Deck 2 "TUNER REC" indicator flashes.
  - d) First time
  - e) Second time
  - f) Third time
  - g) 5-second blank space
  - h) Recording starts
  - i) Pause
  - j) Recording resumes
- To create a blank space of over 5 seconds, hold the TUNER REC button in for the desired amount of time. The pause mode is set when the button is released.
  - To pause without creating a blank space, press the Deck 2 PAUSE button. To resume recording, press the PAUSE button once again.
  - To cancel the recording mode, press the Deck 2 STOP button.

### Sequential Recording

Set the DIRECTION MODE switch to the  position then press the REC button.

After both sides of the tape in Deck 2 are recorded, recording continues on both sides of the tape in Deck 1 (Fig. 45).

Deck 1 is set to the recording standby mode while Deck 2 is recording. (The FORWARD and RECORD indicators on Deck 1 flash.)

### Fig. 45

Recording starts

Forward side of Deck 2 tape

Reverse side of Deck 2 tape

Forward side of Deck 1 tape

Reverse side of Deck 1 tape

Recording ends

### Single Recording . . . (Fig. 46)

### Fig. 46

Deck 2 "TUNER REC" indicator lit

When recording on Deck 2

Deck 1 "TUNER REC" indicator lit

When recording on Deck 1

The RECORD indicator and the FORWARD or REVERSE indicator are lit.

### Manual Recording of Compact Discs, Records, ATs, etc.

Press the REC OUT button to select the source to be recorded. See "REC OUT Button".

Press the PAUSE button.

With the RECORD button pressed in, press the FORWARD PLAY or REVERSE PLAY button to set the deck to the recording standby mode.

— Press the FORWARD PLAY button to record on the forward side or on both sides.

— Press the REVERSE PLAY button to record on the reverse side.

Start playback on the source component.

Adjust the recording level.

### Adjusting the Recording Level

For normal and chrome tapes:

Adjust so that the recording level indicator lights up to the "0" mark when the volume is high. (The indicator may light up to the "+3" mark momentarily.)

For metal tapes:

Adjust so that the recording level indicator lights up to the "+3" mark when the volume is high. (The indicator may light up to the "+6" mark momentarily.)

Press the PAUSE button when playback starts on the source to begin recording.

— The RECORD and FORWARD indicators light when recording on the forward side.

— The RECORD and REVERSE indicators light when recording on the reverse side.

### Manual Sequential Recording

Use the manual recording procedure for sequential recording of a CD, record, or other source from Deck 1 to Deck 2 (or vice versa) (Fig. 47).

Load tapes in both decks and set the DIRECTION MODE switch to the  position.

Set Deck 1 (or Deck 2) to the recording mode.

— Deck 2 (or Deck 1) is set to the recording standby mode (the FORWARD and RECORD indicators flash).

Sequential recording is not possible with FCRS recording of CDs.

If the DIRECTION MODE switch is set to the  position when you start recording though you do not want to record sequentially, press the STOP button on the deck which is in the recording standby mode.

### Fig. 47

Forward side of Deck 1 (Deck 2) tape

Reverse side of Deck 1 (Deck 2) tape

Forward side of Deck 2 (Deck 1) tape

Reverse side of Deck 2 (Deck 1) tape

### You can continue recording from Deck 2 onto Deck 1.

1. Load a new tape into Deck 1 while recording on Deck 2.

2. Press the PAUSE button on Deck 1, then with the RECORD button pressed in, press the FORWARD PLAY or REVERSE PLAY button to set Deck 1 to the recording standby mode.

— Recording continues on Deck 1 when the tape in Deck 2 reaches the end.

### Simultaneous and Independent Recording

See "REC OUT Button".

1. Press the REC OUT TAPE 1 button to select the source to be recorded on Deck 1.

2. Press the REC OUT TAPE 2 button to select the source to be recorded on Deck 2.

3. Operate Decks 1 and 2 as follows.

1) Press the PAUSE button.

2) With the RECORD button pressed in, press the FORWARD PLAY or REVERSE PLAY button to set the deck to the recording standby mode.

3) Adjust the recording level.

4. When playback starts, press the PAUSE button to begin recording.

**Example:** Simultaneous recording of a CD (Fig. 48)

### Fig. 48

a) Amplifier

b) Deck 1

c) Deck 2

● Recording is possible even if the A/V source is set to a position other than CD.

**Example:** Independent recording of a record and a CD (Fig. 49)

### Fig. 49

a) Amplifier

b) Deck 1

c) Deck 2

● Set the A/V source to PHONO.

### Dubbing Tapes

Use normal speed dubbing to listen to the tape in Deck 1 while dubbing. Use high speed dubbing to shorten the time required for dubbing in half.

### Normal Speed Dubbing

Press the DUBBING button to begin normal speed dubbing.

### High Speed Dubbing

Press the HIGH SPEED button to begin high speed dubbing.

● When using the DUBBING or HIGH SPEED button, dubbing always starts from the first selection, and the graphic equalizer effect cannot be recorded.

● To start dubbing from the middle of a tape or to record with the graphic equalizer effect, follow the manual dubbing procedure.

**When the DUBBING or HIGH SPEED button is pressed:**  
(Fig. 50)

### Fig. 50

a) Deck 1

b) The tape is rewound automatically.

c) The beginning of the first selection is found.

d) Playback starts.

e) Deck 2

f) The tape is rewound automatically.

g) The tape is automatically set at the beginning of the leader tape.

h) Recording starts.

● For high speed dubbing, the position of the DOLBY NR switch does not affect the recording. For cross Dolby recording, use normal speed dubbing.

● Press the STOP button on one of the decks to stop dubbing. Pressing the PAUSE buttons will not stop the tapes.

● To switch from normal speed to high speed dubbing and vice versa, first press the STOP button to cancel the dubbing mode, then start over.

- A hum may be recorded onto the tape if a nearby TV is on when dubbing. If so, either turn the TV off or move the TV away.
- Tape lengths may be different, even for tapes of the same brand and nominal length. For this reason, the tape in Deck 2 may stop before the end of the tape in Deck 1.

#### During Dubbing . . . (Fig. 51)

- During normal speed dubbing, only the DUBBING indicator is lit.
- During high speed dubbing, both the DUBBING and HIGH SPEED indicators are lit.
- The DUBBING indicator first flashes, then stops flashing and remains lit.
- The Deck 1 FORWARD and the Deck 2 FORWARD and RECORD indicators first flash, then stop flashing and remain lit.

**Fig. 51**

- DUBBING indicator
- HIGH SPEED indicator
- When dubbing starts, the counter display switches to show "TAPE COPY", then "1 - - - 2" and then back to the counter display mode.

#### Manual Dubbing (Normal Speed Dubbing)

- With the manual dubbing procedure, you can dub from Deck 1 to Deck 2 or from Deck 2 to Deck 1.
- Here we describe the procedure for dubbing from Deck 1 to Deck 2.

1. Press the REC OUT TAPE 2 button to set the recording output mode to "TAPE 1" (on the display). See "REC OUT Button".  
— Set so that the "▼" mark is under the "TAPE 1" indicator.
2. Press the PAUSE button.
3. With the RECORD button pressed in, press the FORWARD PLAY or REVERSE PLAY button to set the deck to the recording standby mode.
4. Start playback on Deck 1 and adjust the recording level. See "Adjusting the Recording Level".
5. Press the FORWARD PLAY or REVERSE PLAY button on Deck 1 and the PAUSE button on Deck 2 simultaneously to start dubbing.
  - The remote control unit buttons cannot be pressed simultaneously.

#### Dubbing Only Certain Selections

- Use the manual dubbing procedure.

  1. Find the beginning of the desired selection on Deck 1.
  2. Start manual dubbing (normal speed dubbing).
  3. When the end of the selection is reached, press the STOP buttons for both decks.
  4. Repeat steps 1 to 3 above to record other selections.

#### Creating Blank Spaces for Searching

- Use the manual dubbing procedure.

  1. When the end of a selection is reached, press the STOP button on Deck 1.
  2. Let the tape in Deck 2 continue in the recording mode for 4 to 5 seconds.
  3. Press the PAUSE button on Deck 2.
  4. Press the FORWARD PLAY or REVERSE PLAY button on Deck 1 and the PAUSE button on Deck 2 simultaneously to resume dubbing.

#### Cross Dolby Dubbing

To record with another Dolby NR system than the one used on the original tape or dub with Dolby on the new tape although the original is recorded without Dolby, simply set the DOLBY NR switches for Decks 1 and 2 as desired.

## Using the Timers

### Timer Functions

#### Unattended Recording

This function allows you to record programs from the radio onto Deck 2 while away from home. Sequential recording from Deck 2 to Deck 1 is also possible.

#### Wake-up Timer

With this function, you can wake up to the radio.

#### Sleep Timer (Max. 90 minutes)

This function allows you to go to sleep to the sound of a CD, tape, or the radio.

- Once these timers are set, the operation can be performed each day at the set times (one on time and one off time per day).
- The timer operation can also be stopped by turning the "TIMER PLAY" or "TIMER REC" indicator off.
- Be sure to set both the on and off times when using the timers. The timers will not operate properly if only one is set. (For the sleep timer, however, only the off time is set.)

### Buttons Used to Set the Clock and Timers (Fig. 52)

#### 1 UP and DOWN buttons

- Use these buttons to set the clock (hours and minutes).
  - Press the DOWN button to decrease the number, the UP button to increase it.
  - The hour or minute changes once each time the button is pressed, or continuously if the button is held in.

#### 2 MEMORY/TIME button

- Use this button when setting the clock and the timer times.

#### 3 CLOCK button

- Use this button when setting the clock.

#### 4 SLEEP button

- Use this button to set the sleep timer. The sleep timer can also be set using the SLEEP button on the remote control unit.

#### 5 TIMER REC button

- Use this button when setting the unattended recording timer.

#### 6 TIMER PLAY button

- Use this button when setting the wake-up timer.

### Setting the Clock

- The clock must be set before the timers can be used.
- The time display flashes when the power is turned on for the first time after connecting the power cord to the outlet.
- The time is shown in the 24-hour mode. "12:00" indicates noon, "0:00" indicates midnight.
- Press the MEMORY/TIME button at the sound of the chime of a time service to set the exact time.

**Example:** Setting the time to 7:30 p.m.

1. Hold in the CLOCK button and press the MEMORY/TIME button.
  - The hours place starts flashing.
2. Press the UP or DOWN button to set the hours to "19".
3. Press the MEMORY/TIME button.
  - The minutes place starts flashing.
4. Press the UP or DOWN button to set the minutes to "30".
5. Press the MEMORY/TIME button.
  - The set time is displayed.

- In case the clock display is flashing after a power failure, reset the clock and the timers.

### Unattended Recording Timer

- Programs on stations preset on the STATION buttons on the tuner can be recorded while away from home. Sequential recording from Deck 2 to Deck 1 is also possible.
- No sound is produced during unattended recording.

1. Set the timer on/off times and the station to be recorded. See the following section "Setting the Timer On and Off Times and Station".

**Example:** To start recording the FM-1 station preset on STATION button "3" at 3:30 p.m. and stop at 4:30 p.m.

2. Prepare the radio for recording.
  - 1) Adjust the recording level, then turn the POWER switch off.
  - 2) Set the tape for recording in Deck 2.
  - 3) Set the DIRECTION MODE switch according to the length of the recording.
    - For sequential recording, set tapes in both decks and set the DIRECTION MODE switch to the  position.
3. Check that the "TIMER REC" indicator is lit.

- It is best to set the on and off times to one minute before and after the program is actually scheduled to start and end.
- To turn the power off after it has been turned on with the timer, simply press the POWER switch.

### Checking the Set Times and Station

The set times and station can be displayed by pressing the TIMER REC button. (The current time display reappears after 5 seconds.)

- Press the TIMER REC button **once** before the unattended recording timer mode is set (when the "TIMER REC" indicator is off), **twice** after the unattended recording timer mode is set (when the "TIMER REC" indicator is on) to display the set times and stations.

To set the unattended recording timer mode, press the TIMER REC button **twice** so that the "TIMER REC" indicator appears on the display.

### Setting the Timer On and Off Times and the Station

Set first the on time, next the off time, and finally the station.

As when setting the clock, use the UP or DOWN button to set the times, then press the MEMORY/TIME button.

Press the TIMER REC button, then press the MEMORY/TIME button within 5 seconds.

- If the unattended recording timer mode has already been set, press the TIMER REC button twice, then press the MEMORY/TIME button.

Set the timer on and off times and the station.

- The "TIMER REC" indicator flashes until all settings are finished.

- 1) Press the UP or DOWN button to set the hours to "15".
  - 2) Press the MEMORY/TIME button.
  - 3) Press the UP or DOWN button to set the minutes to "30".
  - 4) Press the MEMORY/TIME button.
  - 5) Press the UP or DOWN button to set the hours to "16".
  - 6) Press the MEMORY/TIME button.
  - 7) Press the UP or DOWN button to set the minutes to "30".
  - 8) Press the MEMORY/TIME button.
  - 9) Press the FM-1/2 (or AM) button.
  - 10) Press STATION button "3".
  - 11) Press the MEMORY/TIME button.
- The normal display reappears once all settings are finished.

The hours and minutes places stop flashing after they are set.

The "ON TIME" indicator flashes while the on time is being set, and the "OFF TIME" indicator flashes while the off time is being set.

"FM1" and "3CH" flash while the station is being set.

### Wake-up Timer

- This timer lets you wake up to programs on stations preset on the STATION buttons on the tuner.
- The wake-up timer cannot be used with CDs or tapes.

- Set the timer on/off times and the station to be played. See the following section "Setting the Timer On and Off Times and Station".

**Example:** To start reception of the FM-1 station preset on STATION button 3 at 6:30 a.m. and stop at 7:30 a.m.

- Prepare the radio.
  - 1) Adjust the volume and tone.
  - 2) Turn the POWER switch off.
- Check that the "TIMER PLAY" indicator is lit.
- Turn the power off after it has been turned on with the timer, simply press the POWER switch.
- If the times for the unattended recording timer and wake-up timer overlap, the one with the earlier on time is given priority.

### Checking the Set Times and Station

- The set times and station can be displayed by pressing the TIMER PLAY button. (The current time display reappears after 5 seconds.)
  - Press the TIMER PLAY button **once** before the wake-up timer mode is set (when the "TIMER PLAY" indicator is off), **twice** after the wake-up timer mode is set (when the "TIMER PLAY" indicator is on) to display the set times and stations.
- To set the wake-up timer mode, press the TIMER PLAY button **twice** so that the "TIMER PLAY" indicator appears on the display.

### Setting the Timer On and Off Times and the Station

- Set first the on time, next the off time, and finally the station.
- As when setting the clock, use the UP or DOWN button to set the times, then press the MEMORY/TIME button.

1. Press the TIMER PLAY button, then press the MEMORY/TIME button within 5 seconds.

- If the wake-up timer mode has already been set, press the TIMER PLAY button twice, then press the MEMORY/TIME button.

2. Set the timer on and off times and the station.
  - The "TIMER PLAY" indicator flashes until all settings are finished.

- 1) Press the UP or DOWN button to set the hours to "6".
  - 2) Press the MEMORY/TIME button.
  - 3) Press the UP or DOWN button to set the minutes to "30".
  - 4) Press the MEMORY/TIME button.
  - 5) Press the UP or DOWN button to set the hours to "7".
  - 6) Press the MEMORY/TIME button.
  - 7) Press the UP or DOWN button to set the minutes to "30".
  - 8) Press the MEMORY/TIME button.
  - 9) Press the FM-1/2 (or AM) button.
  - 10) Press STATION button "3".
  - 11) Press the MEMORY/TIME button.
- The normal display reappears once all settings are finished.

- The hours and minutes places stop flashing after they are set.
- The "ON TIME" indicator flashes while the on time is being set, and the "OFF TIME" indicator flashes while the off time is being set.
- "FM1" and "3CH" flash while the station is being set.

### Sleep Timer

- Press the SLEEP button to set the sleep timer in steps of 10 minutes.  
The minutes switch in the order 90 → 80 → ... → 10 → off.

**Example:** To turn the power off in 30 minutes

1. Press the SLEEP button.
  - The "SLEEP" indicator and "90" appear.
2. Press the SLEEP button again until "30" is displayed.
  - The clock display reappears approximately 5 seconds after the SLEEP button is released.
  - The sleep timer can also be set from the remote control unit.

- To check how much time is left when using the sleep timer, press the SLEEP button once.  
The normal display reappears approximately 5 seconds after the SLEEP button is released.
- The sleep timer has priority over the off times for the other timers.

### Examples of Timer Usages

1. Set the wake-up timer before getting in bed.
2. Set the sleep timer to listen to the radio, a CD or a tape while going to sleep.
3. Wake up to the sound of the radio the next morning.
4. Set the unattended recording timer before going out.
5. When you come home, listen to what was recorded while you were away. Also edit the tape.
6. Repeat from step 1.

## AV Functions

### Watching Video Tapes

1. Set the TV's video switch to the video mode.
  2. Press the VCR1 or VCR2 button.
  3. Press the play button on the video cassette recorder to start playback.
- The components connected to the VCR1, VCR2, and VDP jacks can be watched regardless of whether the amplifier's power is on or off. Set the REC OUT VCR1 switch to the appropriate position. See the following section "Video Recording".

## Watching Video Discs

1. Set the TV's video switch to the video mode.
2. Press the VDP button.
3. Press the play button on the video disc player to start playback.

## Watching Compact Disc Videos

1. Set the TV's video switch to the video mode.
  2. Press the CD button.
  3. Press the play button on the compact disc video player to start playback.
- The component connected to the CDV (CD) jacks will not function when the amplifier power is off.

## Video Recording

- Use the REC OUT VCR1 switch on the amplifier to record from a second video cassette deck (VCR2) or a video disc player (VDP) onto the first video cassette deck (VCR1).
- To record from a compact disc video onto VCR1, set the amplifier's A/V source to "CD".

| REC OUT VCR1 switch | When amplifier's power is on                                                                            | When amplifier's power is off                                           |
|---------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| SOURCE              | Recording is possible from the VCR2, VDP or CDV.                                                        | Playback is possible on VCR1, recording is possible on VCR2.            |
| VCR2                | Recording is possible from VCR2 while watching the TV, VDP or CDV or listening to a tape or record.     | Playback is possible on VCR2, recording is possible on VCR1.            |
| VDP                 | Recording is possible from the VDP while watching the TV, VCR2 or CDV or listening to a tape or record. | Playback is possible on the VDP, recording is possible on VCR1 or VCR2. |

## Care and Maintenance

### Cleaning

#### Cleaning the Deck 1 and Deck 2 Heads

To assure quality playback and recording, use a cotton swab to clean the parts shown in Fig. 53 every 10 hours of use. For tough dirt, apply a small amount of absolute alcohol or cleaning fluid to the cotton swab.

**Fig. 53**

- a) Capstan
- b) Erasing head
- c) Cotton swab
- d) Pinch roller
- e) Recording/playback head

#### Demagnetizing the Heads

After extended use, the heads become magnetized, causing noise and a loss of sound quality. Use a head eraser (separately available) to demagnetize the heads periodically. (For details, refer to the head eraser's owner's manual.)

#### Cleaning the Cabinet

Use a soft cloth to wipe dirt off the cabinet. For tough dirt, apply some water or diluted neutral detergent to a soft cloth, wring out thoroughly, wipe off the dirt, then wipe the cabinet with a dry cloth.

- Never use benzene, thinner or alcohol, as they can damage the finish.

## Notes for Safe Operation

### When plugging or unplugging the power cord:

- Always hold the plug, not the cord.
- Make sure your hands are dry to avoid electrical shocks.
- Unplug the power cord when not using the system for long periods of time.

### Be careful not to damage the power cord.

To prevent fires and electrical shocks:

- If you notice scratches or broken wires in the cord or poor plug contact, stop using the cord and contact your store of purchase.
- Do not fold, pull, twist or splice the cord.

### Beware of water and dust.

- If water should get in the system, stop using it and contact your store of purchase. Continued use is extremely dangerous, and could result in fires and electrical shocks.
- Using the system in dusty places could damage it.

### Never touch internal parts.

- Never take the system apart or try to modify it. Touching internal parts is extremely dangerous, and could result in fires and electrical shocks.
- Putting metal objects (needles, pins, etc.) inside the system could result in electrical shocks or malfunction.

The laser beam used by the CD player could damage your eyes.  
Disassembling the CD player is extremely dangerous.

### Do not install in hot places.

Do not set the system in places exposed to direct sunlight or near heating appliances. Temperatures above 60°C could damage the cabinet and result in malfunction.

Install the system in a flat, solid place where it will not be subject to vibrations. The CD player may not function properly if set at an inclination of 5° or more.

### Condensation

Condensation (water droplets) may form on the optical lens in the CD player if the surrounding temperature changes abruptly. If this happens, normal operation will not be possible. Remove the disc and let the CD player stand with the disc tray open for approximately one hour before using.

### Magnetic forces

The speakers use strong magnets. Do not place clocks, credit cards, cassette tapes, video tapes, or any other products sensitive to magnetism near the speakers.

### Music manners

Even good music has its time and place. Set the volume accordingly. At night, especially, keep windows closed, use headphones, etc., to avoid bothering your neighbors.

## Troubleshooting

Often what seems to be a problem with the system is actually simply a mistaken operation. Check the following points once more before requesting servicing.

- ▶ Check that the power cord, remote control cords, speaker cords, audio cords and antenna cords are properly connected.
- ▶ Check that the A/V source is set properly.
- ▶ Check that the DIRECTION MODE switch is set properly.
- ▶ Check that the REC OUT buttons and the REC OUT VCR1 switch are set properly.
- ▶ Check that the EQ 1 and EQ 2 SELECT buttons are properly set.
- ▶ Check that the MODE buttons are properly set.

| Symptom                                                          | Possible Cause                                                                               | Corrective Action                                                                 |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>AM Broadcasts</b><br>Noise in the sound.                      | Influence from a motor, fluorescent light, or TV.                                            | Move the set away from the source of the noise.                                   |
| Humming noise.                                                   | Noise over the power cord.                                                                   | Move the power cord away from the AM antenna.<br>Change the direction of the set. |
| <b>FM Broadcasts</b><br>Crackling noise in the sound.            | Influence from car engines being ignited.                                                    | Set the external FM antenna away from the road and as high as possible.           |
| Stereo reception is not possible (noise).                        | Signals are weak.                                                                            | Use an external FM antenna.                                                       |
| <b>Tape Playback and Recording</b><br>Tape does not move.        | The PAUSE button has been pressed.                                                           | Press the PAUSE button again.                                                     |
|                                                                  | Tape has reached the end.                                                                    | Rewind the tape.                                                                  |
|                                                                  | Tape is damaged.                                                                             | Use a different tape.                                                             |
| Sound is distorted.                                              | Head, capstans, or pinch rollers are dirty.                                                  | Clean the head area.                                                              |
|                                                                  | Head is magnetized.                                                                          | Demagnetize the head.                                                             |
| Recorded sound is not clear, or previous recording can be heard. | Recording/playback head is dirty.                                                            | Clean the head area.                                                              |
|                                                                  | Erasing head is dirty.                                                                       |                                                                                   |
| Recording mode cannot be set.                                    | Tape's accidental erasure prevention tabs have been broken off.                              | Apply adhesive tape over the holes.                                               |
| <b>CD Playback</b><br>Disc does not play.                        | Disc is set upside-down.                                                                     | Set disc with the labelled surface facing up.                                     |
|                                                                  | Disc is extremely dirty.                                                                     | Wipe off the dirt.                                                                |
|                                                                  | Pause mode is set.                                                                           | Press the PAUSE (or PLAY) button.                                                 |
|                                                                  | If buttons do not function . . .                                                             | Turn the power off once, then back on.                                            |
|                                                                  | Fixing screw has not been loosened.                                                          | Turn the screw approximately 1/4 turn clockwise.                                  |
| <b>Timers</b><br>Timer playback or recording does not function.  | Clock is not set to the proper time.                                                         | Set the proper time.                                                              |
|                                                                  | The "TIMER PLAY" or "TIMER REC" indicator is off.                                            | Press the TIMER PLAY or TIMER REC button to turn the indicator on.                |
| <b>System</b><br>No sound is produced.                           | The indicator on the amplifier's VOLUME control is flashing (mute mode).                     | Press the MUTE button on the remote control unit.                                 |
|                                                                  | Speaker cords are not connected properly (+ and - sides), activating the protective circuit. | Turn the power off and connect properly.                                          |

If there should be a problem with the system, disconnect the power cord and contact your store of purchase immediately.